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Docket No.: PA19.P15
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BOX PATENT APPLICATION
Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

Transmitted herewith for filing is the original utility patent application of:
Inventor(s): Michelle J. Pillers, et al.
For: TWIST LID FOR INSULATED BEVERAGE CONTAINER

Enclosed are:

- [X] 3 sheets of drawings, Figures 1 through 8.
[X] An assignment of the invention to: Pacific Market, Inc.
a corporation of the State of Washington.
[] An associate power of attorney.
[X] A Declaration and Power of Attorney
[X] A verified statement to establish small entity status under 37 C.F.R. 1.9 and 37 C.F.R. 1.27.
[X] The filing fee has been calculated as shown below.
[] Filed without fee or formal papers.
[] A Preliminary Amendment

| For: | No. Filed | No. Included in Basic Filing Fee | Small Entity Rate | Fee | Other Than A Small Entity or Rate | Fee |
|------------------------------|-----------|-------------------------------------|----------------------|-----------|--------------------------------------|-----------|
| Basic Utility Fee | | | | \$ 380.00 | or | \$ 760.00 |
| Total Claims | [21] | -20 | x \$11.00 = | \$11.00 | or x \$22.00 = | \$0.00 |
| Independent Claims | [2] | -3 | x \$41.00 = | \$0.00 | or x \$82.00 = | \$0.00 |
| Multiple Dependent Claims | [] | 0 | x \$135.00 = | \$0.00 | or x \$270.00 = | \$0.00 |
| ASSIGNMENT(S) | [1] | 0 | x \$40.00 = | \$40.00 | or x \$40.00 = | \$0.00 |
| | | | TOTAL= | \$431.00 | or TOTAL= | \$0.00 |

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[X] The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 18-1355. A duplicate copy of this sheet is enclosed.
[X] Any additional filing fees required under 37 C.F.R. 1.16.
[] Any patent application processing fees under 37 C.F.R. 1.17.

Respectfully submitted,

RICHARDSON & FOLISE

Michael J. Folise
Reg. No. 31,952

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Michelle J. Pillers et al.
Filed: Concurrently Herewith
For: TWIST LID FOR INSULATED BEVERAGE CONTAINER

Docket No: PA19.P15

Date: January 6, 2000

Assistant Commissioner for Patents
Box PATENT APPLICATIONS
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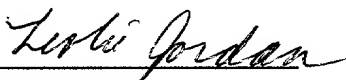
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Respectfully submitted,

RICHARDSON & FOLISE


Leslie Jordan

Enclosures: Form PTO 1082
Patent Application
Informal drawings (3 sheets of informal drawings, Figs. 1 to 8)
Declaration and Power of Attorney
Assignment with Recordation Cover Sheet
Small Entity Declaration
Check No. 5906 for \$431.00
Postcard

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant or Patentee: Michelle J. Pillers, Barry Beyerlein, and Robert FreedAttorney's Docket No: PA19.P15Serial or Patent No.: Filed or Issued: herewithFor: TWIST LID FOR INSULATED BEVERAGE CONTAINER

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS
(37 C.F.R. §§ 1.9(f) AND 1.27(c)) -- SMALL BUSINESS CONCERN

I declare that I am:

☐ the owner of the small business concern identified below.☒ an official of the small concern empowered to act on behalf of the concern identified below.NAME OF CONCERN Pacific Market, Inc.ADDRESS OF CONCERN 2125 Western Avenue, Suite 501, Seattle, WA 98121

I declare that the above-identified small business concern qualifies as a small business concern as defined in 13 C.F.R. §§ 121.3-18 and reproduced in 37 C.F.R. § 1.9(d) for purposes of paying reduced fees under 35 U.S.C. §§ 41(a) and 41(b) in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I declare that rights under contract or law have been conveyed to and remain with the small business concern with regard to the invention entitled:

TWIST LID FOR INSULATED BEVERAGE CONTAINER

by inventor(s) Michelle J. Pillers, Barry Beyelein, and Robert Freed

as described in:

☒ [X] the specification filed herewith.

☐ [] application Serial No._____, filed____.

☐ [] Patent No._____, issued_____.

If the rights held by the small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below and no rights to the invention are held by any person, other than the inventor, who could not qualify as an independent inventor under 37 C.F.R. § 1.9(c) or by any concern which would not qualify as a small business concern under 37 C.F.R. § 1.9(d) or a nonprofit organization under 37 C.F.R. § 1.9(e).*

*NOTE: Separate verified statements are required from each named person, concern and organization having rights to the invention averring to his/its status as a small entity. (37 C.F.R. § 1.27)

FULL NAME_____

ADDRESS_____

☐ [] individual

☐ [] small business concern

☐ [] nonprofit organization

FULL NAME_____

ADDRESS_____

☐ [] individual

☐ [] small business concern

☐ [] nonprofit organization

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the

time of paying, the earlier of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 C.F.R. § 1.28(b))

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that the making of willfully false statements and the like is punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Robert M. Harris, Jr.

TITLE OF PERSON OTHER THAN OWNER President

ADDRESS OF PERSON SIGNING 2125 Western Avenue, Suite 501, Seattle, WA 98121

SIGNATURE  DATE 1-4-00

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Title: TWIST LID FOR INSULATED BEVERAGE CONTAINER

5

TECHNICAL FIELD

The invention relates to removable lids for beverage containers. More specifically, the invention relates to a selectively openable twist-type lid for an insulated beverage container.

BACKGROUND OF THE INVENTION

Thermally insulated beverage containers have become increasingly popular with the public for use with hot beverages, such as coffee. Containers of this type may also be used for cold beverages as well. Hot beverages, such as coffee and tea, impose the most demanding thermal requirements on such a container. As a result, consumers have come to appreciate that double walled, vacuum insulated containers perform this function best. Such containers have sidewalls often manufactured from metal, particularly stainless steel to withstand the high mechanical loading due to atmospheric pressure. Thermally insulated beverage containers designed for keeping cold beverages from becoming warm typically place a lower thermal load on the beverage container. As a result, such containers are often manufactured with a plastic double wall, wherein the interstitial space between the inner and outer walls is either thermally insulated with air or a foamed material.

In either case, it is highly desirable to provide a selectively openable lid for the beverage container. The lid performs at least two functions, the first of which is to prevent the beverage from spilling out of the container when the user is not actually drinking the beverage. This feature is particularly important when a hot beverage is

0 in the container so as to prevent the user from becoming
burned if the container tips over. As a second function,
the lip should provide for drinking the fluid at a
continual rate to prevent splashing or dribbling when the
beverage is being drunk from the container. The lids for
5 such containers are therefore typically provided with an
open position, a closed position, and a third position in
which the lid can be removed from the beverage container
for cleaning. An example of a travel mug having a three-
position, rotatable lid of the type described above is
10 disclosed in United States Patent No. 5,249,703 to Karp.
That patent discloses a travel mug having two inwardly
directly circumferential ears defining a gap region
therebetween. A rotatable lid, having radially directed
arms emanating from a central region at the bottom of the
15 lid are adapted to pass through the gaps in the ears, and
when rotated with the lid engage an underside of the
circumferential rim of the lid with the radially inward
directed ears. The rim is provided with diametrically
opposed apertures to permit fluid to egress from the mug
20 while air enters in through the remaining aperture to
equalize pressure within the mug. The disclosure of this
patent is incorporated herein by reference. One
particular problem with this prior art design is that the
drinking vessel must be specially manufactured with
25 dedicated structure to engage the arms of the lid. In
addition, although the lid is substantially splashproof
when the lid is in the closed position, it is not
leakproof if the mug is tipped over.

It has become increasingly common for users to employ
30 thermally insulated beverage containers, particularly of
the type best adapted for insulating hot beverages such as
coffee, in moving vehicles, such as automobiles. One
design branch in the prior art has attempted to provide a
lid for such containers which is easily operated by a
35 single hand between an open and closed position so that
the user does not inadvertently spill a hot beverage on

0 herself while driving her car. Lids of this type often
employ a push bottom mechanism having a normally closed
position. Examples of such prior art devices are shown in
the following patents: U.S. Patent No. 4,303,173 to
Nergard; U.S. Patent No. 3,964,631 to Albert; U.S. Patent
5 No. 3,967,748 to Albert; and U.S. Patent No. 4,099,642 to
Nergard. With respect to the lids disclosed in the above-
identified patents, the user typically depresses a button
near the rim of the lid to remove a stopper-like device
from an aperture in the lid. Releasing the button returns
10 the stopper to its normally closed position. Although
devices of this type perform their intended function well,
they have a significant unanticipated drawback.
Specifically, the position of a stopper in a normally
closed position provides an ideal breeding ground for
15 bacteria in the junction between the stopper and the lid
drinking aperture. In order to properly clean a lid of
this type which quickly becomes fouled with such bacterial
growth, the user must manually clean the lid by holding
the mechanism open while using a brush or the like. It
20 has been found that merely placing such lids in a
dishwasher or the like will not adequately clean the area
of contact between the stopper and the lid. Most users of
this type of device find the requirement to manually wash
the lid so inconvenient that they frequently will not
25 purchase a second product of the same design.

Therefore a need exists for a splashproof and
leakproof lid for an insulated beverage container which
provides a truly leakproof and spillproof design in both
an open and closed position, which does not encourage
30 bacterial growth between moveable parts of the lid, and
which is easily cleaned by the user.

SUMMARY OF THE INVENTION

35 It is therefore an object of the present invention to
provide a removable lid for an insulated beverage

0 container having leakproof and spillproof open and closed positions.

It s yet another object of the invention to provide the above-described object with a removable lid which does not encourage bacterial growth between moving parts of the
5 lid.

It is yet another object of the present invention to achieve the above objects in a removable lid which is easy to clean.

The invention achieves these objects, and other
10 objects and advantages which will become apparent from the description which follows, by providing a selectively openable lid for a drinking vessel having relatively rotatable base and cap members. Each member has drinking and venting apertures that are rotatably alignable with
15 respect to one another to form a first, closed position and a second, open position. Fluid seals between the base and cap member provide substantially leakproof fluid conduits between the respective venting and drinking apertures in the base and cap members when the members are
20 in the second, open position, and isolate interstitial areas between the members from the drinking and venting apertures in the base member when the members are in their first, closed position.

An alternate embodiment of the invention provides a
25 structure to delimit the relative rotation of the cap and base members to the first and second positions described above, as well as to a third position in which the cap and base members are disengagable so that they may be cleaned by immersion in a dishwasher or the like without the need
30 for an individual to physically maintain the members in a separate condition against spring pressure or the like. The lid can also be provided with a detent mechanism to discourage inadvertent relative rotation of the members from the second, open position to the third, disengaged
35 position. The base and cap members are preferably provided with corresponding bayonet ears for relative

0 rotational engagement therebetween. In addition, a
rotational bearing in the form of a spindle and arbor can
be provided to guide the relative rotation of the cap and
base members.

The cap and base member can be provided with
5 substantially any external geometric appearance, however
a circular appearance is preferred to coincide with the
substantially circular cross-sectional dimension of most
beverage containers. In addition, the cap member is
preferably provided with a depressed central region to
10 form a drinking basin for the user.

BRIEF DESCRIPTION OF THE DRAWINGS

15 Figure 1 is an isometric, perspective view of the
selectively openable lid of the present invention in use
with a generic drinking vessel.

Figure 2 is a top plan view of the lid in a closed
position.

20 Figure 3 is a top plan view of the lid in an open
position.

Figure 4 is an exploded, isometric view of base and
cap members of the invention.

25 Figure 5 is a bottom plan view of the cap member of
the invention.

Figure 6 is a top plan view of the base member of the
invention.

Figure 7 is a cross-sectional, side elevational view
of the lid taken along lines 7-7 of Figure 3.

30 Figure 8 is an enlarged, partial cross-sectional view
of the circled area indicated in Figure 7.

0 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

 A three-position, selectively openable lid is generally indicated at reference numeral 10 for use with a thermally insulated beverage container 12, as shown in Figure 1. The lid 10 has substantially circular cap and base members, generally indicated at reference numerals 14 and 16 in Figures 4, 5 and 6. The cap and base members each have corresponding drinking apertures 18, 20 and venting apertures 22, 24. The cap and base members 14, 16 are relatively rotatably moveable with respect to one another from a first closed position shown in Figure 2, wherein the cap member drinking and venting apertures 18, 22 and the base member 16 drinking and venting apertures 22, 24 are out of respective registration with one another, to a second, open position shown in Figure 3 wherein the apertures are in registration with one another due to rotation of the cap and base members in a clockwise direction 26 of approximately 30 degrees. The cap and base members are also moveable to a third, disengaged position shown in Figure 4 by further rotating the cap member with respect to the base member in the clockwise direction an additional 30 degrees.

 As will be apparent to those of ordinary skill in the art, when the lid 10 is in the first closed position shown in Figure 2, a user may not drink from the beverage container 12, whereas when the lid is in the second open position, shown in Figure 3, the user may drink from the beverage container 12. The user may also separate the cap and base members 14, 16, as shown in Figure 4, for cleaning, such as in a dishwasher.

 The cap member 14 has an inwardly tapered and downwardly directly circular sidewall 30, defining a depressed drinking basin 32 having an upper surface 34 and a lower surface 36, defining the drinking and venting apertures 18, 22. The cap member 14 also has a downwardly depending external, circumferential flange 38, having a

0 knurled region 40 for grasping the cap member and rotating
the same with respect to the base member 16. As best seen
in Figures 4 and 5, the cap member sidewall 30 has on its
outer side diametrically opposed and laterally extending
bayonet ears 44, each subtending an angle of approximately
5 60 degrees. The lower surface 36 of the cap member also
supports a downwardly directed, cylindrical projection or
spindle 46, for guiding relative rotation of the cap and
base members 14, 16. The external flange 38 of the cap
member 14 supports a downwardly directed, arcuate
10 projection or timing cam 48 for limiting relative rotation
of the cap and base members 14, 16. The timing cam
subtends an angle of approximately 22.5 degrees.

As best seen in Figures 4, 6 and 7, the base member
16 has a substantially circular sidewall 52 having
15 external threads 54 adapted for mating with corresponding
threads (not shown) on an inside surface of the beverage
container 12. The sidewall 52 has, at an upper end
thereof, a circumferential rim 56 which supports an O-ring
58 on the underside of the rim for forming a fluid-tight
20 seal with the beverage container 12. The sidewall 52 also
defines a substantially flat, depressed floor region 60
which defines the drinking and venting apertures 20, 24.
An upper surface of the floor region also defines a
depressed central arbor 62 having sidewalls which form a
25 bearing surface for the spindle 46. The arbor, itself,
has a floor 64 to prevent fluid from the beverage
container from passing into the upper surface of the floor
region 60 other than through the drinking or venting
apertures 20, 24.

30 As best seen in Figures 4 and 6, the rim 56 of the
base member 16 also has first and second delimiting stop
members 66, 68 which project upwardly from the rim. The
stop members are separated by an angular distance of
approximately 145 degrees and form a receiving channel 70
35 for the timing cam projection 48. When the cap member 14
is rotated clockwise from the first closed position as

0 shown in Figure 2, through the second open position as
 shown in Figure 3, to the third, disengaged position shown
 in Figure 4, the timing cam 48 has its trailing edge 72
 initially in contact with the second delimiting stop
 member 68 until the timing cam's leading edge 74 comes
 5 into contact with the first delimiting stop member 66. As
 defined herein, the "leading edge" of a structural member
 is defined as the surface which is first encountered when
 the cap member 14 is rotated in a clockwise direction as
 shown in Figures 1 through 3. The receiving channel 70 is
 10 provided with a ramp-like detent structure 76 located
 approximately one-third of the distance from the second
 delimiting stop member 68 to the first delimiting stop
 member 66. The detent structure 76 discourages
 inadvertent rotation of the cap member 14 in a counter-
 15 clockwise direction from the second open position to the
 third, disengaged position unless the user imparts
 sufficient torque to the cap member to resiliently deform
 the timing cam 48 so that it may pass over the detent
 structure 76.

20 In contrast to the symmetrical, diametrically opposed
 bayonet ears 44 on the cap member 14, the base member 16
 has first and second inwardly directed bayonet ears 80,
 82 on an inner surface of the circular sidewall 52. The
 leading edges 84, 86 of the bayonet ears 80, 82 are
 25 diametrically opposed with respect to the center of arbor
 62. However, the first bayonet ear 80 subtends an angle
 of approximately 60 degrees, whereas the second bayonet
 ear 86 subtends an angle of approximately 30 degrees.
 Thus, the trailing edges 88, 90 are not diametrically
 30 opposed. This asymmetrical structure permits the cap
 member 14 to be released from the base member 16 when the
 timing cam leading edge 72 is in contact with the first
 delimiting stop member 66.

As best seen in Figures 6 and 8, the base member 16
 35 is provided with a venting aperture seal 100 and a
 drinking aperture seal 110. The seals are preferably

0 manufactured from food grade silicon or rubber and are in
the shape of an arcuately deformed figure-8. One portion
of the figure-8 portion of each seal circumscribes the
respective drinking or venting aperture. The remaining
portion of the figure-8 shaped seal circumscribes empty
5 areas 112, 114 of the floor region 60 of the base member
16. As will be apparent to those of ordinary skill in the
art, when the cap and base members 14, 16 are in the
first, closed position as shown in Figure 2, the drinking
and venting apertures 20, 24 of the base member 16 are in
10 registration with the smooth, lower surface 36 of the cap
member 14, which are surrounded by portions of the figure-
8 shaped seals 100, 110. Thus, the lower surface 36 of
the cap member 14 and substantially all of the floor
region 60 of the base member 16 remain uncontaminated by
15 fluid from the drinking vessel 12. Similarly, when the
cap and base members 14, 16 are in the second, open
position shown in Figure 3, the drinking and venting
apertures 18, 20 and 22, 24 are in registration and also
surrounded by closed portions of the seals 100, 110.
20 Thus, the lower surface 36 and floor region 60 also remain
uncontaminated by fluid in the beverage container 12 when
a user is drinking therefrom. The assignee of the present
invention has discovered that by fluidly isolating the
drinking and venting apertures from the remaining
25 structure of the lid 10, the lid remains substantially
sanitary for much longer periods of time as compared to
prior art designs. Eventually, when it is necessary to
clean the respective parts of the lid, the user can easily
disassemble the lid as shown in Figure 4 and place the
30 parts in a dishwasher or the like for cleaning and
sanitization.

In view of the above, the cap and base members 14, 16
are preferably manufactured from a food grade thermo-
plastic elastomer such as acrylonitrile butadiene styrene
35 (ABS) or another suitable injection molded polymer. The
seals 100, 110 and the O-ring 58 are preferably

0 manufactured from food grade silicon, rubber or another
suitable material. The knurled region 40 is preferably a
rubberized material adhered to or ultrasonically welded
onto the external flange 38.

5 Another feature of the invention is disclosed in
Figure 8. The invention provides for gradual release of
pressure when the lid 10 is rotated from the closed to
open position. Such pressure may undesirably form inside
the drinking vessel 12 when there is a drop in ambient
10 temperature while the lid is in the closed position and a
hot beverage is stored in the vessel. If the vessel is
full, some of the fluid may be undesirably ejected from
the venting aperture 22. To provide a circuitous path for
release of such pressure, the venting aperture 22 is
provided with a lower, arcuate depression or rebate 120.
15 The rebate has a depth of approximately one-half of the
thickness of the drinking basin 32 and has a length of
approximately one-quarter inch. As best seen in Figure 6,
the rebate 120 and venting aperture 22 are preferably
totally circumscribed by the portion of seal 100 which
20 encloses empty area 112 when the lid 10 is in the closed
position. When the lid is rotated towards the open
position from the closed position, the rebate 120 clears
the empty area 112 sealed venting aperture seal 100 first.
This provides a small, indirect venting pathway from
25 inside the vessel 12 to outside of the vessel to gently
release any such pressure.

Other alternate embodiments of the invention are
contemplated which will be apparent to those of ordinary
skill in the art upon reviewing the above disclosure. For
30 example, the seals 110, 112 can be placed on the lower
surface 36 of the drinking basin 32 while the floor region
60 of the base member 16 can be made substantially smooth.
In addition, the orientation of the bayonet ears described
above can be reversed with the symmetrical bayonet ears
35 being positioned on the base member 16, and the
asymmetrical bayonet ears being placed on the cap member

0

CLAIMS

I claim:

1. A selectively openable lid for a drinking vessel, comprising:

5 a circular base member having mounting means thereon for removably connecting the base member to a drinking vessel, the base member further having a downwardly depending base member side wall defining a depressed floor region having upper and lower surfaces and drinking and
10 venting apertures, wherein an inwardly directed surface of the side wall has a plurality of opposed bayonet ears thereon;

a circular cap member for rotational engagement with the base member, the cap member having a downwardly
15 depending cap member side wall defining a depressed drinking basin having upper and lower surfaces and drinking and venting apertures positioned and sized so as to correspond to the drinking and venting apertures in the base member, wherein an outwardly directed surface of the
20 cap member side wall has a plurality of opposed bayonet ears thereon positioned and sized for corresponding engagement with the bayonet ears on the base member;

first seal means between the cap and base members for forming a fluid conduit between the corresponding drinking
25 and venting apertures when said apertures are in respective rotational registration with one another, so that interstitial areas between the cap and base members are fluidly isolated from the apertures and remain substantially uncontaminated by drinking fluid from the
30 drinking vessel when the cap member is in a first, closed position; and,

second seal means between the cap and base members for forming a fluid barrier between the corresponding drinking and venting apertures when the cap member is in
35 a second, open position and said apertures are out of respective rotational registration with one another, so

0 that the interstitial areas between the cap and base
members are fluidly isolated from the base member
apertures and remain substantially uncontaminated by
drinking fluid from the drinking vessel when the cap
member is in the second, open position.

5

2. The selectively openable lid of Claim 1,
including timing means for limiting relative rotation of
the cap and base members from the first, closed position
through the second, open position and to a third
10 disengaged position wherein the corresponding bayonet ears
on the cap and base members are disengaged so that the
members can be separated and cleaned.

3. The selectively openable lid of Claim 2, wherein
15 the timing means includes angularly spaced apart, upwardly
directed, delimiting stop projections on the base member
and a arcuately shaped, downwardly directed timing cam
projection on the cap member positioned for angular
movement between the stop projections.

20

4. The selectively openable lid of Claim 3, wherein
the timing cam subtends an angle of approximately 22.5
degrees and wherein the delimiting stops are angularly
separated by an angle of approximately 145 degrees.

25

5. The selectively openable lid of Claim 2, wherein
the timing means includes a detent structure between the
stop projections to discourage inadvertent relative
rotation of the cap and base members from the second, open
30 position to the third, disengaged position.

6. The selectively openable lid of Claim 5, wherein
the detent structure is a ramp member having reduced
resistance to relative clockwise rotation of the cap and
35 base members from the third, disengaged position to the
second, open position as compared to relative counter

0 clockwise rotation of the cap and base members from the
second, open position to the third, disengaged position.

7. The selectively openable lid of Claim 1, wherein
the bayonet ears on the cap member are diametrically
5 opposed and subtend an angle of approximately 60 degrees,
wherein the bayonet ears on the base member also are
diametrically opposed, and wherein a first one of the base
member bayonet ears subtends an angle of approximately 60
degrees and a second one of the base member bayonet ears
10 subtends an angle of approximately 30 degrees.

8. The selectively openable lid of Claim 7, wherein
leading edges of the base member bayonet ears are
diametrically aligned.
15

9. The selectively openable lid of Claim 1, wherein
the cap member has a centrally disposed, cylindrical
spindle depending downwardly from the lower surface of the
drinking basin, and wherein the base member has a
20 centrally located arbor for receipt of the cylindrical
spindle for guiding relative rotation of the cap and base
members.

10. The selectively openable lid of Claim 1, wherein
25 the first and second seal means include arcuately shaped
ovoid gaskets in the upper surface of the base member
floor and wherein the lower surface of the drinking
receptacle is substantially smooth and adapted for sliding
sealing engagement with the gaskets, except that the lower
30 surface of the drinking receptacle has a rebate adjacent
to the venting aperture for gradual release of pressure in
the drinking vessel.

11. A selectively openable lid for a drinking
35 vessel, comprising:

0 a base member having a floor region defining upper and lower surfaces and drinking and venting apertures, and having a plurality of opposed base member bayonet ears thereon;

5 a circular cap member for rotational engagement with the base member, the cap member defining a depressed drinking basin having upper and lower surfaces and drinking and venting apertures positioned and sized so as to correspond to the drinking and venting apertures on the base member, and a plurality of opposed cap member bayonet
10 ears positioned thereon and sized for corresponding engagement with the base member bayonet ears;

seal means between the cap and base members for forming a fluid conduit between the corresponding drinking and venting apertures when said apertures are in
15 respective rotational registration with one another and for forming a fluid barrier between the corresponding drinking and venting apertures when said apertures are out of respective rotational registration with one another, so that interstitial areas between the cap and base members
20 are fluidly isolated from the base member apertures and remain substantially uncontaminated by drinking fluid from the drinking vessel when the cap member is in a first, closed and second, open position.

25 12. The selectively openable lid of Claim 11, including timing means for limiting relative rotation of the cap and base members from the first, closed position through the second, open position and to a third, disengaged position wherein the corresponding bayonet ears
30 on the cap and base members are disengaged so that the members can be separated and cleaned.

13. The selectively openable lid of Claim 12, wherein the timing means includes angularly spaced apart,
35 upwardly directed, delimiting stop projections on the base member and an arcuately shaped downwardly directed timing

0 cam projection on the cap member positioned for angular
movement between the stop projections.

14. The selectively openable lid of Claim 13,
wherein the timing cam subtends an angle of approximately
5 22.5 degrees and wherein the delimiting stops are
angularly separated by an angle of approximately 145
degrees.

15. The selectively openable lid of Claim 12,
10 wherein the timing means includes a detent structure
between the stop projections to discourage inadvertent
relative rotation of the cap and base members from the
second closed position to the third disengaged position.

15 16. The selectively openable lid of Claim 15,
wherein the detent structure is a ramp member having
reduced resistance to relative clockwise rotation of the
cap and base members from the third, disengaged position
to the second, open position as compared to relative
20 counter clockwise rotation of the cap and base members
from the second, open position to the third, disengaged
position.

17. The selectively openable lid of Claim 11,
25 wherein the bayonet ears on the cap member are
diametrically opposed and subtend an angle of
approximately 60 degrees, wherein the bayonet ears on the
base member also are diametrically opposed, and wherein a
first one of the base member bayonet ears subtends an
30 angle of approximately 60 degrees and a second one of the
base member bayonet ears subtends an angle of
approximately 30 degrees.

18. The selectively openable lid of Claim 17,
35 wherein leading edges of the base member bayonet ears are
diametrically aligned.

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ABSTRACT OF THE INVENTION

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A three position, selectively openable twist lid for a drinking vessel has separate drinking and venting apertures. The lid has two parts — a base member and a cap member. The base and cap members can be relatively rotated from a first, closed position to a second, open position and to a third, disengaged position in which the cap and base members may be separated for cleaning.

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FIG. 1

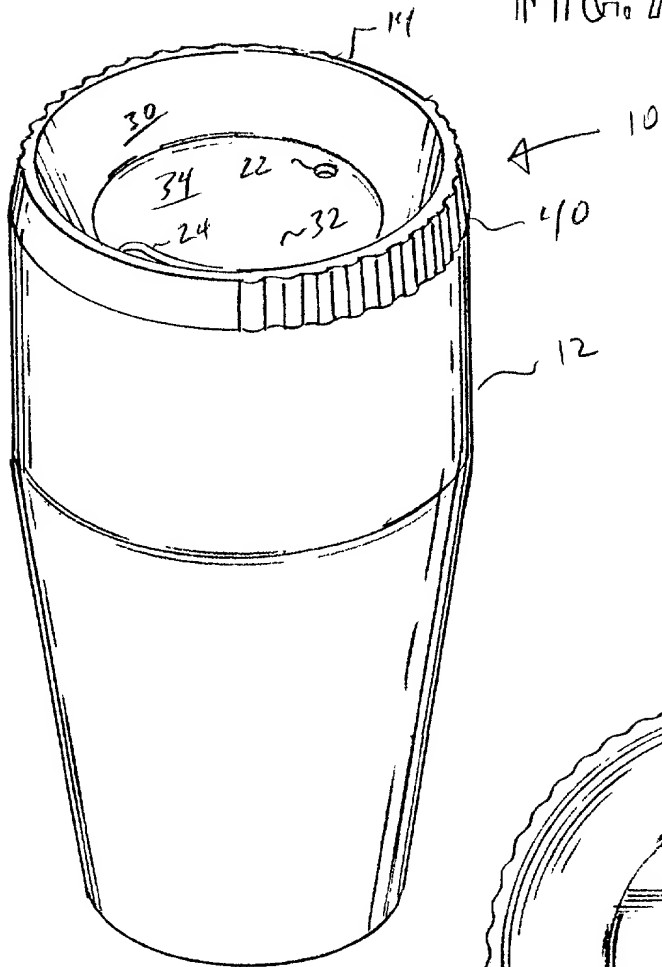


FIG. 2

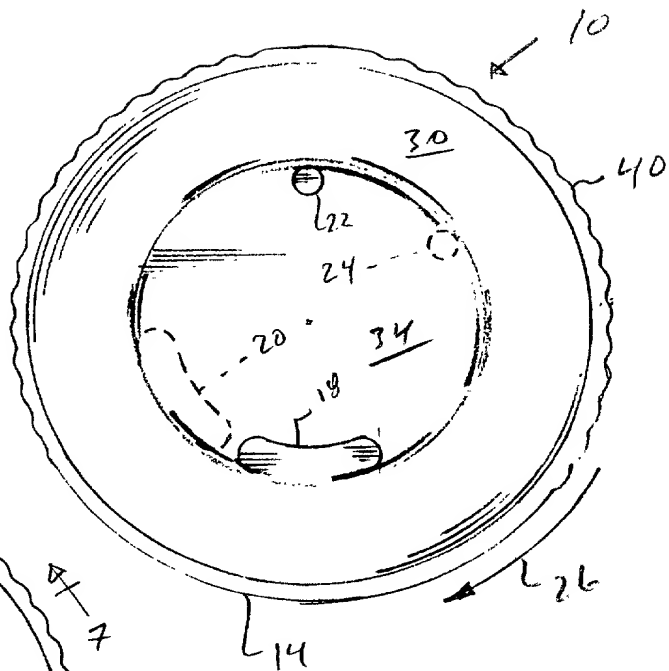
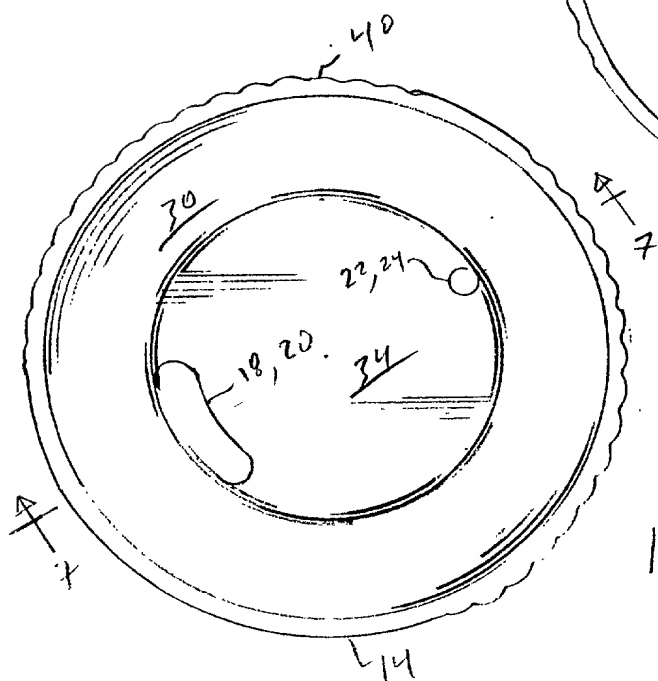
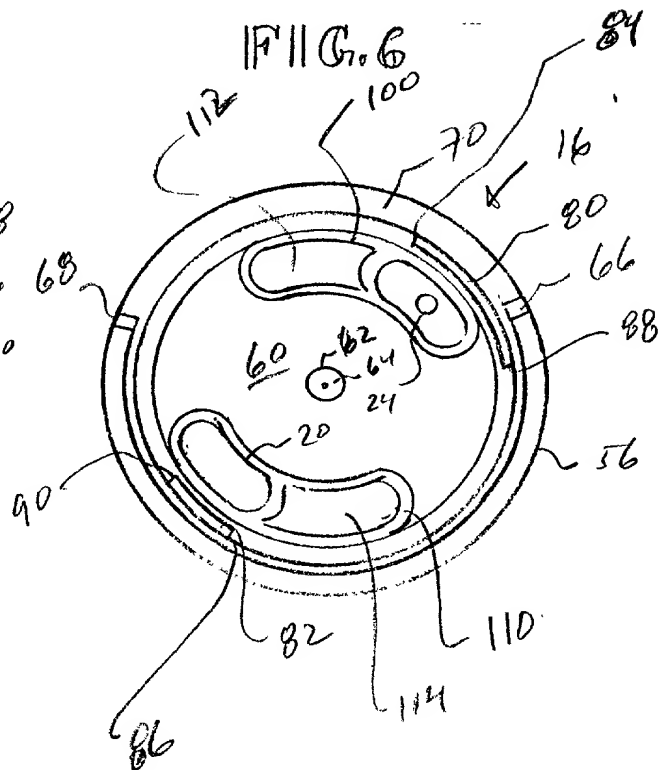
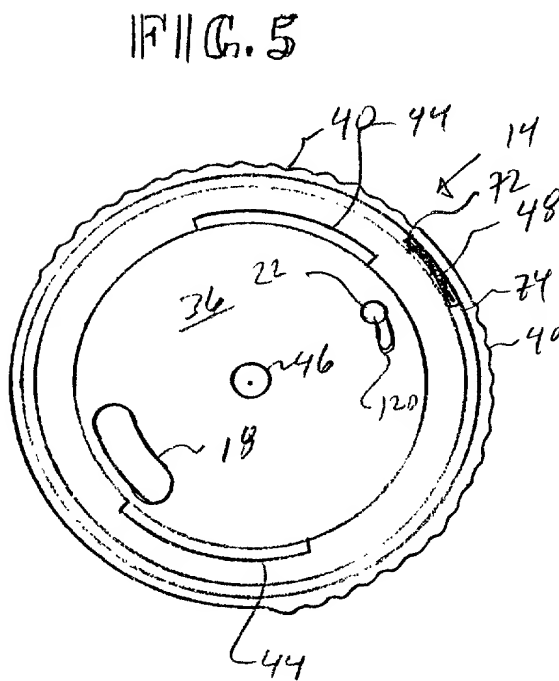
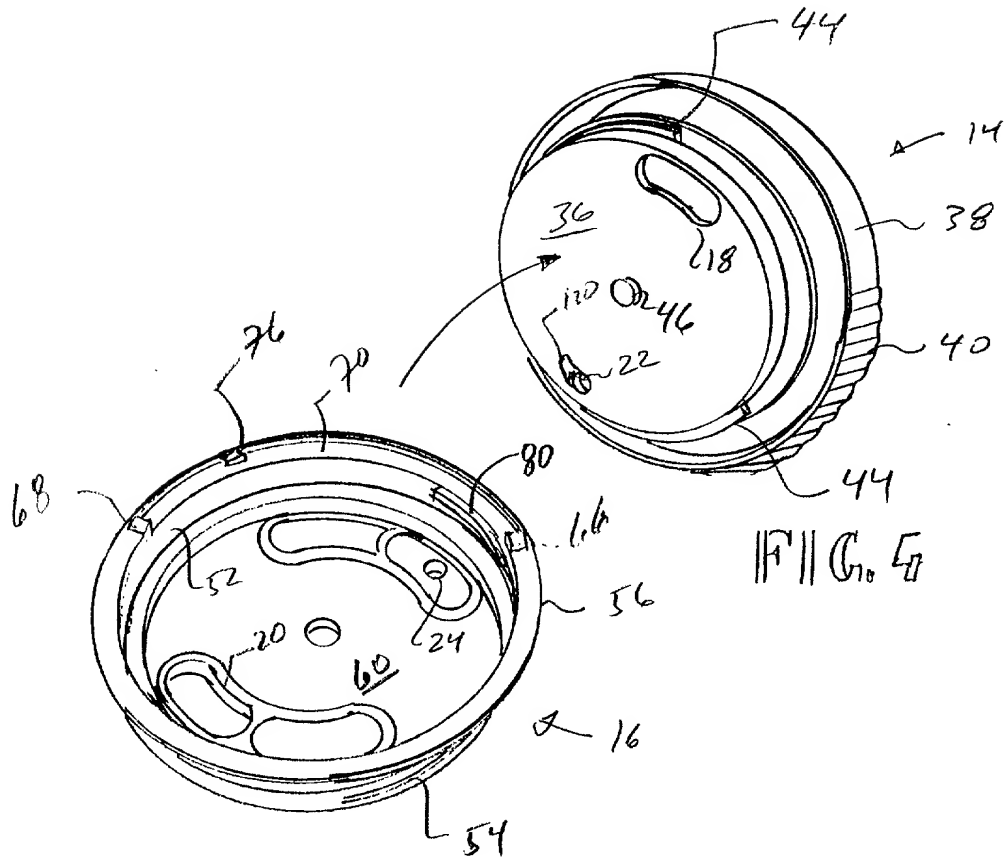
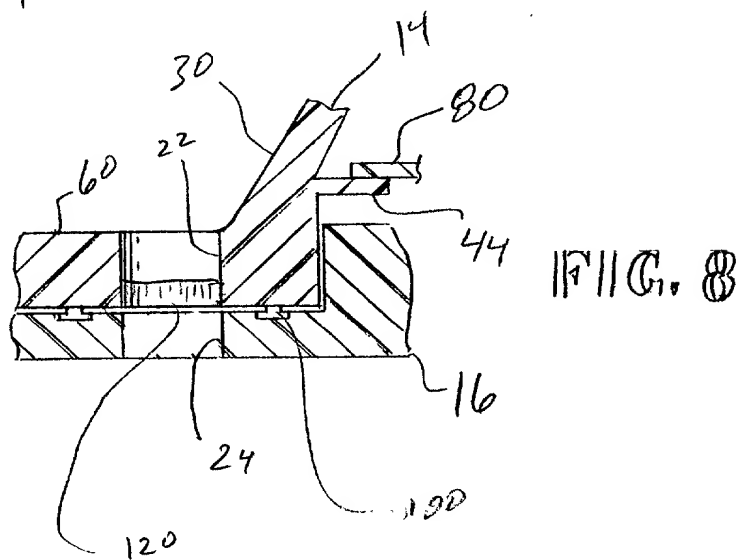
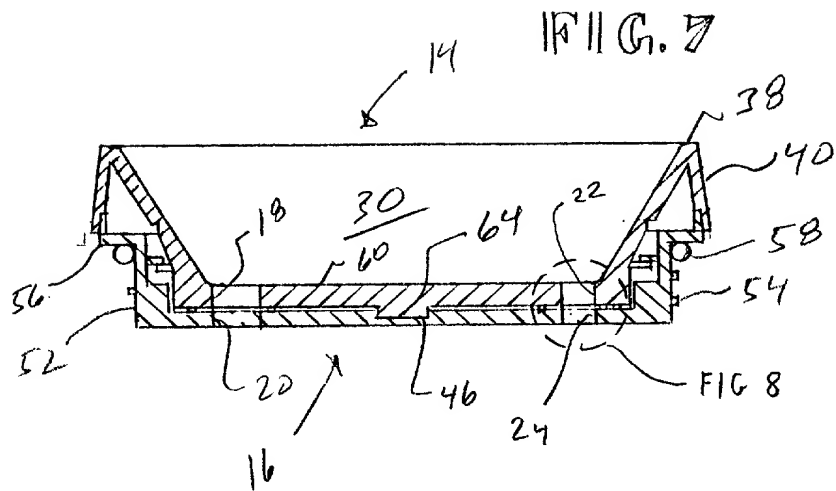


FIG. 3







DECLARATION AND POWER OF ATTORNEY

As the below-named inventors, we declare that:

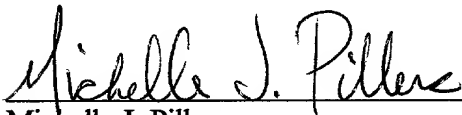
Our residences, post office addresses, and citizenships are as stated below under our names.

We have reviewed and understand the contents of the foregoing specification, including the claims, and we believe we are the original, first and joint inventors of the invention entitled "TWIST LID FOR INSULATED BEVERAGE CONTAINER," which is described and claimed in the foregoing specification.

We acknowledge our duty to disclose information of which we are aware which is material to the examination of this application in accordance with 37 C.F.R. { 1.56(a).

We hereby appoint MICHAEL J. FOLISE, Registration No. 31,952 and H. ALBERT RICHARDSON Registration No. 27,701, composing the firm of RICHARDSON & FOLISE, 1200 Fifth Avenue, Suite 1801, Seattle, Washington, 98101, my attorneys to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. Please direct all telephone calls to Michael J. Folise at (206) 682-1600 and telecopies to (206) 682-3985.

We further declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that the making of willfully false statements and the like is punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and may jeopardize the validity of any patent issuing from this patent application.


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